WHAT IS CLAIMED IS:

1.   A system for effectively utilizing resources in an electronic device,
comprising:

5   a resource characterization coupled to said electronic device, said
Res. listing and Res. usage value requi. for optimal performance of requested process
          resource characterization corresponding to a requested process;

    an allocation manager configured to handle said requested process by
          referencing said resource characterization; and

    a processor coupled to said electronic device for controlling said

10   allocation manager.

2.   The system of claim 1, wherein said electronic device is coupled to an
electronic network that is implemented according to an IEEE Std 1394 serial
bus standard.

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3.   The system of claim 1 wherein said electronic device is one of a
consumer-electronics device, an audio-visual device, a set-top box, and a
personal computer device.

20   4.   The system of claim 1 wherein said requested process includes one or
more time-sensitive isochronous processes for manipulating time-critical
isochronous data.

5.   The system of claim 1 wherein said resource characterization includes

25   resource requirements for executing said requested process, and wherein
said allocation manager compares said resource requirements to current
available resources, said allocation manager authorizing said requested
process only when said resource requirements are less than, or equal to, said
current available resources.

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Sub A1

Sub C1

Sub A2

6.   The system of claim 1 wherein a software module generates a request to instantiate said requested process on said electronic device.

7.   The system of claim 6 wherein said request includes an identifier that corresponds to said resource characterization.

8.   The system of claim 6 wherein said allocation manager evaluates said resource characterization in response to said request from said software module.

9.   The system of claim 8 wherein said resource characterization includes one or more resource listings and one or more corresponding resource usage values that are required for an optimal performance of said requested process.

10.   The system of claim 8 wherein said resource characterization includes resource information regarding total available resources from said electronic device.

11.   The system of claim 8 wherein said allocation manager compares resource usage values from said resource characterization and current available resource values from said electronic device to determine whether to authorize said requested process.

12.   The system of claim 11 wherein said current available resource values are initially set to be less than one-hundred percent of total device resources before any resource allocation is made.

13.   The system of claim 11 wherein said allocation manager authorizes said requested process whenever said resource usage values from said resource characterization are less than or equal to said current available resource values from said electronic device.

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14.   The system of claim 11 wherein said allocation manager denies said requested process whenever said resource usage values from said resource characterization are greater than said current available resource values from said electronic device.

15.   The system of claim 13 wherein said allocation manager updates said available resource values with said resource usage values whenever said requested process is authorized by said allocation manager.

16.   The system of claim 13 wherein a picokernel in said electronic device instantiates and executes said requested process after said allocation manager authorizes said requested process.

17.   The system of claim 16 wherein said requested process executes with optimal performance due to guaranteed pre-allocated resources provided by said electronic device.

18.   The system of claim 1 wherein said allocation manager sequentially references a plurality of resource characterizations to handle a plurality of respective requested processes.

19.   The system of claim 1 wherein said allocation manager references a plurality of resource characterizations to handle said requested process.

20.   The system of claim 1 wherein at least one of said resource characterization and said allocation manager is re-configurable to provide an altered functionality to said electronic device.

21. A method for effectively utilizing resources in an electronic device, comprising the steps of:

referencing a resource characterization with an allocation manager, said resource characterization corresponding to a requested process;

handling said requested process with said allocation manager based upon said resource characterization; and

controlling said allocation manager with a processor that is coupled to said electronic device.

22. The method of claim 21, wherein said electronic device is coupled to an electronic network that is implemented according to an IEEE Std 1394 serial bus standard.

23. The method of claim 21 wherein said electronic device is one of a consumer-electronics device, an audio-visual device, a set-top box, and a personal computer device.

24. The method of claim 21 wherein said requested process includes one or more time-sensitive isochronous processes for manipulating time-critical isochronous data.

25. The method of claim 21 wherein said resource characterization includes resource requirements for executing said requested process, and wherein said allocation manager compares said resource requirements to current available resources, said allocation manager authorizing said requested process only when said resource requirements are less than, or equal to, said current available resources.

26. The method of claim 21 wherein a software module generates a request to instantiate said requested process on said electronic device.

27. The method of claim 26 wherein said request includes an identifier that
5 corresponds to said resource characterization.

28. The method of claim 26 wherein said allocation manager evaluates said resource characterization in response to said request from said software module.

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29. The method of claim 28 wherein said resource characterization includes one or more resource listings and one or more corresponding resource usage values that are required for an optimal performance of said requested process.
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30. The method of claim 28 wherein said resource characterization includes resource information regarding total available resources from said electronic device.

20 31. The method of claim 28 wherein said allocation manager compares resource usage values from said resource characterization and current available resource values from said electronic device to determine whether to authorize said requested process.

25 32. The method of claim 31 wherein said current available resource values are initially set to be less than one-hundred percent of total device resources before any resource allocation is made.

33. The method of claim 31 wherein said allocation manager authorizes
30 said requested process whenever said resource usage values from said resource characterization are less than or equal to said current available resource values from said electronic device.

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34.   The method of claim 31 wherein said allocation manager denies said requested process whenever said resource usage values from said resource characterization are greater than said current available resource values from said electronic device.

35.   The method of claim 33 wherein said allocation manager updates said available resource values with said resource usage values whenever said requested process is authorized by said allocation manager.

36.   The method of claim 33 wherein a picokernel in said electronic device instantiates and executes said requested process after said allocation manager authorizes said requested process.

37.   The method of claim 36 wherein said requested process executes with optimal performance due to guaranteed pre-allocated resources provided by said electronic device.

38.   The method of claim 21 wherein said allocation manager sequentially references a plurality of resource characterizations to handle a plurality of respective requested processes.

39.   The method of claim 21 wherein said allocation manager references a plurality of resource characterizations to handle said requested process.

40.   The method of claim 21 wherein at least one of said resource characterization and said allocation manager is re-configurable to provide an altered functionality to said electronic device.

41.. A computer-readable medium comprising program instructions for
utilizing resources in an electronic device by performing the steps of:

    referencing a resource characterization with an allocation manager,
said resource characterization corresponding to a requested
process;

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    handling said requested process with said allocation manager based
upon said resource characterization; and

    controlling said allocation manager with a processor that is coupled to
said electronic device.

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42. A system for effectively utilizing resources in an electronic device,
comprising:

    means for referencing a resource characterization that corresponds to a
requested process;

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    means for handling said requested process based upon said resource
characterization; and

    means for controlling said means for referencing and said means for
handling.